SlapSeg04 Analysis Report

Addendum: Effect of Finger Position Identification

The following tables include additional data on the effect of finger position identification; this is related to SlapSeg04 Analysis Report Appendix B.2, Figure B-9. Participants were instructed to report the finger position of each segmented fingerprint if it could be determined. In other words, for each segmented finger, a segmentation application could specify a finger position (which in analysis could be correct or incorrect), or leave the finger position unspecified.

The results in this Addendum are for all datasets, on slaps for which the hand was identified. Database errors (invalid fingerprints and sequence errors) were excluded.

This table shows the proportion of segmented fingerprints in each dataset for which each segmenter left the finger position unspecified.

	Proportion of Segmented Fingerprints with Unknown Finger Position							
	12kL	12kP	BEN	II	TX	BAT	OhioI	All Datasets
123ID	2.1%	4.8%	0.9%	8.7%	4.2%	3.9%	1.9%	3.9%
Aware1	1.6%	7.2%	1.0%	3.8%	6.8%	4.3%	1.1%	3.9%
Aware2	0.5%	1.4%	0.5%	1.5%	2.0%	1.5%	0.1%	1.1%
Cogent1	1.2%	5.3%	0.4%	11.8%	5.8%	4.8%	0.6%	4.6%
Cogent2	0.7%	4.2%	0.3%	5.6%	5.2%	4.4%	0.4%	3.1%
IAFIS	0.7%	4.7%	0.3%	8.9%	3.4%	1.8%	0.3%	3.2%
NEC	< 0.1%	0.2%	< 0.1%	1.2%	0.2%	0.2%	< 0.1%	0.3%
NIST	-	-	-	-	-	-	-	-
Sagem1	1.8%	13.1%	0.4%	12.2%	7.9%	4.3%	0.8%	6.4%
Sagem2	1.9%	13.2%	0.5%	11.9%	11.2%	4.4%	0.8%	7.0%
SHB	1.2%	5.4%	0.4%	12.0%	5.9%	4.8%	0.6%	4.7%
Sonda	0.5%	2.8%	0.2%	0.9%	1.6%	0.6%	0.1%	1.1%
UltraScan	1.6%	6.2%	1.0%	15.1%	5.4%	8.8%	1.1%	5.8%

This table shows the proportion of all individual fingerprints

- above high threshold (High),
- below high and above low threshold (Marginal), or
- below low threshold (Unmatched)

Each is broken down by whether the finger position was specified correctly incorrectly, or left undefined, except for unmatched fingers, for which specified finger positions were not broken into correct and incorrect finger positions.

	Proportion of segmented fingerprints, by matcher threshold and finger identification (all datasets)							
	High, Correct finger position	High, Undefined finger position	High, Incorrect finger position	Marginal, Correct finger position	Marginal, Undefined finger position	Marginal, Incorrect finger position	Unmatched, Undefined finger position	Unmatched, Specified finger position
123ID	89.3%	-	3.3%	2.2%	-	0.7%	3.9%	0.5%
Aware1	87.5%	-	3.7%	2.6%	-	0.9%	3.9%	1.5%
Aware2	93.1%	-	1.9%	2.5%	-	0.5%	1.1%	0.8%
Cogent1	92.4%	2.5%	0.2%	1.9%	0.4%	0.2%	1.7%	0.6%
Cogent2	94.1%	2.0%	< 0.1%	1.9%	0.3%	0.2%	0.8%	0.5%
IAFIS	93.3%	0.3%	0.6%	1.9%	0.1%	0.6%	2.9%	0.5%
NEC	96.4%	< 0.1%	0.1%	2.3%	< 0.1%	0.3%	0.2%	0.7%
NIST	93.6%	-	1.6%	2.5%	-	0.4%	-	1.8%
Sagem1	91.1%	5.0%	< 0.1%	1.8%	0.5%	0.2%	0.9%	0.4%
Sagem2	90.4%	5.3%	< 0.1%	1.9%	0.6%	0.2%	1.1%	0.5%
SHB	92.4%	2.6%	0.2%	1.9%	0.4%	0.2%	1.7%	0.6%
Sonda	95.0%	-	0.5%	2.2%	-	0.6%	1.1%	0.7%
UltraScan	87.1%	1.1%	2.8%	2.0%	0.1%	0.4%	4.5%	2.0%